

## **FREEZE PROTECTION PLAN FOR THE TREATMENT SYSTEM FOR POND A-4, POND C-2, AND SPRAY EVAPORATION SYSTEM AT POND A-2 AND LANDFILL POND**

### **1.0 INTRODUCTION**

This Winter Freeze Protection Plan provides guidance for responding to freezing conditions at the Treatment System at Pond A-4, Pond C-2, and the Spray Evaporation System at Pond A-2 and the Landfill Pond, resulting from a failure in the freeze protection system in place. This plan covers the actions required to thaw the pipe lines in case of a breakdown in the existing freeze protection system.

### **2.0 SITE DESCRIPTION**

The Treatment System for Pond A-4 is located on the north side of Pond A-4, and consists of Granular Activated Carbon Units (GACU), (2 units and 4 vessels) which are located inside of a propane heated tent.

The Treatment System for Pond C-2 is located directly South of Pond C-2, and consists of Granular Activated Carbon Units (GACU), (1 unit and 2 vessels).

### **3.0 ACTIVITIES REQUIRING EMERGENCY FREEZE PROTECTION RESPONSE**

The Treatment System for Pond A-4 consists of a transfer line from Pond B-5 to Pond A-4, a transfer line from A-4 into the tent, and a discharge line from A-4 to the out fall. The pipe line from B-5 pond to the A-4 pond is constructed of High Density Polyethylene (HDPE) walls that are approximately 1 inch thick and black in color. These pipes are not insulated or wrapped with heat tape, although they do have drain valves which are used to drain water from within the pipes immediately after use. Drainage occurs immediately following the completion of any activities associated with the transfer and discharge lines especially during winter operations.

In the event that freezing does occur to the transfer pipe the following steps are taken to resume normal operations:

1. The snow is removed from around the pipes, and because of the black color of the pipes, the focus of the sun acts as a natural source of heat within the pipe which melts the accumulation of any ice.
2. Run a temporary line between the units until the main line thaws

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There is a no chance of the discharge line freezing because it is a downhill gravity flow line and no standing water is left inside the pipe.

The Treatment System for Pond C-2 consists of a transfer line to the Broomfield Diversion Ditch and Pond B-5. It is constructed of High Density Polyethylene (HDPE) walls that are approximately 1 inch thick and black in color. These pipes are not insulated or wrapped with heat tape (although they do have drain valves which are used to drain water from within the pipes immediately after use) because activity is not normally required during the winter months.

If activity is required during the winter months at the Treatment System for Pond C-2, the contractor (Riedel Environmental Services) would be responsible for operating and maintaining the Units per the contract.

In the unlikely event that freezing would occur to pipes the following steps are taken to resume normal operations:

1. The snow is removed from around the pipes, and because of the black color of the pipes, the focus of the sun acts as a natural source of heat within the pipe which melts the accumulation of any ice.
2. Run a temporary line between the units until the main line thaws  
The pumps and lines at Pond A-2 and the Landfill Pond are used for spray evaporation and are not allowed to operate during the winter months. Prior to ceasing operations in November, the pumps and lines are drained of all water in preparation for the winter months.

There are currently no open work orders for any maintenance or repairs for these facilities.